



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

September 4, 2003

Ms. Caroline Robinson
Remedial Project Manager
USEPA, Region IV
61 SW Forsyth Street
Atlanta, Georgia 30303

Re: Dubose Oil Products Superfund Site
ACOE 5-Year Review 2003

Dear Ms. Robinson:

The Florida Department of Environmental Protection (FDEP) has completed a review of the ACOE 2003 5-Year Review Report for the Dubose Oil Products Superfund Site. The FDEP concludes the document is satisfactory. The FDEP recommends the site for no further action. The monitor wells should be properly abandoned and the remaining treatment equipment should be removed from the site.

If you have any additional questions or concerns, please contact me at (850) 245-8968.

Sincerely,

Leona Miles
Project Manager
Hazardous Waste Cleanup Section

Cc: Sheri Zettle, ACOE, Mobile District 109 Saint Joseph Street, Mobile, AL 36602
Robert Ariatti, Jr. PO Box 149, Pascagoula, MS 39568-0149

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

4WD-STSMB

MEMORANDUM

SUBJECT: Dubose Oil Products Company Superfund Site
Second Five-Year Review

FROM: Caroline Robinson, RPM *Caroline Robinson*
South Site Management Branch

THRU: Carol Monell, Chief *efm*
South Management Branch

TO: Winston A. Smith, Director
Waste Management Division

Attached please find the Second Five-Year review Report for Dubose Oil Products Company Superfund Site in Cantonment, Escambia County, Florida. Section 121(C) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, requires that if a remedial action is taken that results in any hazardous substances, pollutants, or contaminants remaining at the site, the Environmental Protection Agency (EPA) shall review the remedial action no less often than each five years after the initiation of the remedial action to assure that human health and the environment are being protected by the remedial action being implemented. The first Five-Year Review for the Dubose Oil Products Company Superfund site, was approved by EPA on September 24, 1998. Additional sampling was conducted in July 2001, July 2002 and June 2003.

Soil and groundwater contamination are addresses at the Dubose Oil Products Company Site. The selected remedy for the soil component included onsite biodegradation of contaminated soil. The Remedial Action commenced in June 1993 and the Preliminary Closeout Report was signed September 25, 1995 with the completion of soil treatment (achievement of soil cleanup goals). Long term groundwater and surface water monitoring was implemented in October 1995 and is continuing with quarterly monitoring until the site is de-listed.

Based on present site conditions, the review of the on-going quarterly data, and the interviews conducted during the Second Five Year Review, the remedy has met the requirements of the Record of Decision (ROD) to ensure protectiveness of human health and the environment. The attached Second Five-Year Review documents the current conditions at the site and states

that the remedy has attained groundwater and surface water cleanup goals through natural attenuation, and the remedy continues to be protective of human health and the environment.

Attachment

Approved by: James J. Rutzyman for Date: 9/25/03
Winston A. Smith, Director
Waste Management Division
US EPA Region 4

**DUBOSE OIL PRODUCTS COMPANY SITE
CANTONMENT, FLORIDA
SECOND FIVE-YEAR REVIEW REPORT**

I. INTRODUCTION

The U.S. Environmental Protection Agency (USEPA) has conducted a second five-year review of the remedial action implemented at the Dubose Oil Products Company (DOPC) Site in Cantonment, Florida, to evaluate the protectiveness of site remedy. This second five-year review was conducted from March to August 2003, and this report documents the results of the review.

The primary purpose of the five-year review is to determine whether the site remedy remains protective of human health and the environment. In addition to presenting the findings and conclusions of the review, deficiencies are identified, and corrective actions are recommended. The five-year review documents the evaluation of the site remedy, operation and maintenance activities, and the continued appropriateness of remedial action objectives (RAOs) at the site.

This review is required by statute. Section 121© of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and Section 300.430 (f) (4) (ii) of the National Oil and Hazardous Substance Contingency Plan (NCP), require that periodic (no less often than every five years) reviews be conducted for sites where hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure following the completion of all remedial actions.

This five-year review is the second review for the DOPC site. The trigger for this statutory review was the first five-year review completed in September 1998. The initial trigger at the site was the initiation of remedial action on June 24, 1993 (actual onsite construction date). The Preliminary Closeout Report was signed on September 25, 1995, with the completion of soil remediation to soil cleanup goals. This five-year review will focus on the remedy for groundwater and surface water contamination at the site.

II. SITE CHRONOLOGY

Table 1 presents the chronology of events for the DOPC site.

Table 1
Chronology of Site Events

EVENT	DATE
Site Discovery	September 1, 1980
Preliminary Assessment/Site Investigation Report	September 1, 1982
Hazard Ranking System Package	November 22, 1983
Proposal to National Priorities List	October 15, 1984
Final on National Priorities List	June 10, 1986
Remedial Investigation/Feasibility Study Initiated	January 1988
Remedial Investigation/Feasibility Study Complete	April 1989
Record of Decision	March 29, 1990
Consent Decree Filed	June 17, 1991
Remedial Action Start	May 1993
Preliminary Closeout Report	September 25, 1995
Groundwater and Surface Water Monitoring Plan Implemented	October 31, 1995
Erosion Control Plan Implemented	June 27, 1996
Final Site Inspection	August 19, 1996
Initial Five-Year Review Completed	September 30, 1998
Groundwater and Surface Water Monitoring Summary Report	January 29, 2001
Summary Report to the Court and Parties	October 16, 2001
Additional Surface Water Sampling Event, July 2001	December 6, 2001
Project Review	February 2002
Additional Groundwater and Surface Water Sampling Event, July 2002	September 16, 2002
Additional Groundwater and Surface Water Sampling Event, June 2003	July 15, 2003
Second Five-Year Review	September 30, 2003

III. BACKGROUND

The following subsections present background information for the DOPC site including physical characteristics, land resource use, history of contamination, initial response, and basis for taking action.

PHYSICAL CHARACTERISTICS

The DOPC site occupies approximately 10 acres of land in Escambia County, two miles west of the town of Cantonment, Florida. See Figure 1 in Attachment 1. The site is located in a rural agricultural setting. The elevation of the site ranges from approximately 155 feet mean sea level (MSL) on the south of the site to 88 feet MSL on the north. The DOPC site is situated in a recharge area of the regional sand-and-gravel aquifer of the Florida panhandle. The regional aquifer is a sequence of sand, gravel, and clay approximately 500 feet thick and is underlain by a 550-foot thickness of sandy clay. At the DOPC site, the regional aquifer is unconfined to seasonally semi-confined by a locally continuous clay unit varying from 30- to 50-feet in thickness. The surficial sands above the clay layer contain a perched water table. Aquifer testing indicated that the perched water table and the regional water table aquifer are poorly connected. Gradients in the perched water table are northerly, while gradients in the regional aquifer are westerly.

Surface water features at the site include natural drainage and three man-made ponds built to retain natural spring seepage and storm water runoff. An intermittent stream extends north from the site to join a second intermittent stream prior to the confluence with Jacks Branch, one of four Florida tributaries to the Perdido River.

Mean monthly temperatures at the site range from 52 degrees Fahrenheit (°F) in January to 82°F in July, and mean annual precipitation is 61.6 inches. The average wind direction is due south, and average wind speed is 7 knots.

LAND AND RESOURCE USE

Land use in the vicinity of the DOPC site is predominately agricultural, although development of low-density housing is encroaching from the east. The community water supply in the area is provided by the Farm Hill Utility District. Tree farms lie west of the site, while pasture land and undeveloped forest areas lie to the south and north. Aerial photographs from 1980 indicate about 35 residences within 1/2 mile of the DOPC site. Eleven residences are located within 1/4 mile of the former contaminated soil pit (or "vault") with the nearest residence approximately 540 feet south of the center of the vault. The soil in the vault has been remediated and no longer contains contaminated soil. The nearest community of Cantonment, a town of about 3,500 people, is about two miles east of the site. Land use in Cantonment is mixed residential, commercial, and industrial.

HISTORY OF CONTAMINATION

Mr. Earl Dubose acquired the site in late 1977. From January 1979 to November 1981, Mr. Dubose operated the site as a waste storage, treatment, recycling, and disposal facility. The facility used a batch thermal treatment process to recover a usable oil product from waste oil, petroleum refining wastes, and oil-based waste solvents. Waste oils were transported to the site by tanker trucks. Spent solvents and process wastes from petroleum refining and wood treating operations arrived in 55-gallon drums. The drum contents were emptied into treatment tanks with the empty drums either resold, crushed for resale as scrap metal, or buried onsite.

In September 1980, Mr. Dubose applied to the USEPA for a Resource Conservation and Recovery Act Interim Status permit to operate a treatment, storage and disposal facility at the site. Mr. Dubose continued to operate the facility without an approved permit, and he did not inform his clients that he was operating without a permit. In November 1981, Mr. Dubose ceased operations at the site and dismantled his equipment for transport elsewhere.

INITIAL RESPONSE

In March 1982, the Florida Department of Environmental Regulation (now the Florida Department of Environmental Protection [FDEP]) conducted an Interim Status Standards Compliance Inspection at the site and found Mr. Dubose was preparing to close the site without an approved closure plan. In April and May 1982, USEPA and FDEP investigated the site and found buried metal objects, contaminated springs and leachate seeps, and oil sheen on the North Pond.

In July 1982, Mr. Dubose submitted a closure plan to FDEP. The plan did not meet FDEP criteria, and Mr. Dubose was denied permission to close the site. In May 1983, FDEP filed a civil complaint against Mr. Dubose alleging that actions by Mr. Dubose had violated surface water quality criteria, posed a threat to local groundwater supplies, violated the Florida Air and Water Pollution Act, violated the Florida Solid Waste Statute, and posed an imminent hazard and immediate danger to human health, safety, welfare and the environment.

In July 1983, Mr. Dubose began operating a treatment system to attempt to remediate on site surface waters. Mr. Dubose did not have the permits to carry out this work as required by Florida law. On August 17, 1983, FDEP filed a motion for a preliminary injunction prohibiting further activities at the site that posed a risk to public health and safety and allowing FDEP access to the site to assess clean-up requirements. In September 1983, the court granted a preliminary injunction in favor of FDEP. When Mr. Dubose failed to submit a proposal for removal of contaminated soils and buried drums by March 5, 1984, as ordered, FDEP filed a motion for contempt and supplementary injunctive relief. On November 2, 1984, the court entered a second consent agreement requiring Mr. Dubose to excavate and secure contaminated materials. Between November 1984 and May 1985, the area that had been the South Pond was excavated and lined with a 36-mil polyvinyl chloride (PVC) liner. The depression was filled with site soils to approximately 20 feet above surrounding grade and covered with a 30-mil PVC cover. An estimated 38,000 cubic yards of soil was placed in the former South Pond or vault.

The DOPC site was proposed for the National Priorities List (NPL) in 1984. It became final on the NPL on June 10, 1986. Following the identification of potentially responsible parties (PRPs), a PRP Steering Committee was formed. The PRP Steering Committee commissioned an outside consultant to develop a work plan for conducting a Remedial Investigation (RI)/Feasibility Study (FS) for the site. The work plan was prepared, and subsequently approved by FDEP in October 1987. On October 26, 1987, a Consent Agreement was reached between FDEP and the PRPs for proceeding with the RI/FS, and the work began in January 1988.

BASIS FOR TAKING ACTION

Contaminants

The RI was initiated in January 1988 and completed in October 1988. Results of site testing indicated low to undetectable levels of semi-volatile organics in soils, sediments and water outside the vault. Inside the vault, levels of organic contaminants including volatile, semi-volatiles and phenols were 100 to 1000 times higher.

Testing showed no contaminants in groundwater off site, or in air and wind-blown dust, and no significant levels of contaminants in the regional water table aquifer onsite. Volatile organic contaminants were detected at less than 50 parts per billion in water from the perched water table aquifer and two onsite surface water impoundments.

Volatile organic concentrations in soil within the vault ranged from 22 to 38,270 micrograms per kilogram ($\mu\text{g/kg}$). Polynuclear aromatic compounds were detected at concentrations ranging from 578 to 122,400 $\mu\text{g/kg}$. Pentachlorophenol (PCP) concentrations in the vault ranged from 58 to 51,000 $\mu\text{g/kg}$. Trichloroethene (TCE) was detected in two deep vault samples at concentrations of 170 and 350 mg/kg (Engineering-Science, 1990).

Onsite soils generally were found to be below detectable levels for organics of concern; however, six areas (or "hot spots") outside of the vault area had detectable levels of volatile and semi-volatile organic compounds. Polynuclear aromatic compounds constituted the majority of contamination found in DOPC soils.

Risk Assessment

The following complete pathways of exposure were identified for the baseline risk assessment: dermal exposure to surface water onsite, dermal exposure to surface water offsite, dermal exposure to sediments in the tributary to Jacks Branch, ingestion of soils onsite, ingestion of surface water onsite, and ingestion of sediments in the tributary to Jacks Branch. Potential receptors for these six pathways are children aged 3 to 12, both as trespassers and family members residing near the site. An exposure pathway through groundwater could exist if no remediation occurred, the vault liner failed, or the site had been developed for residences that do not utilize public water supplies. As a very long-term possibility without remediation efforts, contaminants could migrate off site and emerge from groundwater into the tributary to Jacks Branch.

IV. REMEDIAL ACTIONS

The following subsections present the remedial actions for the DOPC site including remedy selection, remedy implementation, and operation and maintenance.

REMEDY SELECTION

The Record of Decision (ROD) was signed on March 29, 1990. The selected remedy addressed soil, groundwater, and surface water and consisted of composting/windrowing, wastewater treatment, site re-grading, topsoil cover, and short-term monitoring. The remedy was selected to remediate the source to contaminant levels below RAOs that are protective of human health and the environment. The low levels of groundwater contamination were expected to degrade naturally over a short period of time, and active remediation of groundwater was not required by the ROD. The ROD specified a short-term groundwater monitoring program would be required for approximately 5 years.

The major components of the remedy included the following:

- Excavation of non-contaminated soil in the vault and placement in the ravine.
- Transformation of the hog barn area into a bioremediation treatment facility.
- Excavation and bioremediation treatment of contaminated vault soils and disposal in the ravine.
- Draining and filling of the onsite ponds.
- Placement of a two-foot topsoil layer over the ravine and former pond area, final grading and vegetation.
- Installation of surface water runoff controls to accommodate seasonal precipitation.
- Additional soil sampling during the remedial design to confirm the location of "hot spots" of contaminated soil outside the vault.
- Deed restrictions to preclude inappropriate future land use.
- Groundwater and surface water monitoring.

According to the ROD, cleanup objectives for site waters were developed for the North Pond discharge point. This monitoring point was selected, because the small ponds and the perched water table discharge directly into the North Pond. The point of water exiting the North Pond discharge pipe was considered to be "offsite" and was the location for application of water Applicable or Relevant and Appropriate Requirements (ARARs).

The cleanup goals for TCE, 1,1-Dichloroethene, polynuclear aromatic compounds, and xylenes were based primarily on potential leaching of these materials from soils into the perched water table and migrating to the North Pond. The cleanup goals for PCP and benzene were based on health based criteria protective of human health. These cleanup goals also would prevent contaminant levels in groundwater from exceeding drinking water standards. Table 2 presents the RAOs established in the ROD for water and soil. RAOs are reviewed and compared to current ARARs in Section VII.

Table 2
Remedial Action Objectives for Surface Water and Soil

Contaminant	Water	Soil
Benzene	1 µg/L	10 mg/kg
1,1-Dichloroethene	7 µg/L	0.070 mg/kg
Pentachlorophenol	30 µg/L	50 mg/kg
Polynuclear Aromatic Compounds	10 µg/L	50 mg/kg
Trichloroethene	3 µg/L	0.050 mg/kg
Xylenes	50 µg/L	1.5 mg/kg

Source: USEPA, 1990
µg/L = micrograms per liter
mg/kg = milligrams per kilogram

REMEDY IMPLEMENTATION

The Remedial Design/Remedial Action Work Plan was approved in April 1992, and the Remedial Action commenced in May 1993. The installation of the wastewater treatment plant was completed in October 1993, and the construction of site controls and temporary facilities was completed in November 1993. The bioremediation of onsite soils that failed RAOs for volatile organic compounds and polynuclear aromatic compounds began January 10, 1994, and was completed September 9, 1994. The biotreatment facility leachate was collected and treated onsite monthly before it was discharged. The North Pond and Leachate Pond were then drained. The Preliminary Closeout Report was submitted on September 25, 1995, and the Final Site Inspection was held on August 19, 1996. In September 1996, the Remedial Action Report was submitted to USEPA and documented the soil had been cleaned to achieve RAOs.

Short-term groundwater and surface water monitoring were initiated in October 1995 and continued quarterly through August 2000. Following the five-year quarterly monitoring, additional surface water sampling was conducted in July 2001, and groundwater and surface water sampling was conducted at selected locations in July 2002 and June 2003.

OPERATION AND MAINTENANCE

Operation and Maintenance (O&M) for the site include maintenance of the site grading/drainage and implementation of the Groundwater and Surface Water Monitoring Plan. The PRPs are responsible for developing, funding, and implementing all O&M activities under USEPA oversight. On August 21, 1995, the Groundwater and Surface Water Monitoring Plan was approved and implementation commenced on October 31, 1995. The Erosion Control Implementation Plan was approved May 10, 1996, and the construction of the erosion control measures was initiated on June 27, 1996.

The Groundwater and Surface Water Monitoring Plan strategy consisted of an initial sampling round of all groundwater monitoring wells, quarterly sampling of selected groundwater monitoring wells within or downgradient of the site, quarterly sampling of two surface water locations, and annual sampling of selected upgradient groundwater monitoring wells. The

samples were collected and analyzed for selected volatile and semi-volatile organic compounds. Quarterly monitoring reports were submitted to USEPA and FDEP for review. Following five-years of monitoring, additional monitoring was conducted at the site, and reports were submitted for review. Groundwater and surface water monitoring will continue until USEPA determines RAOs have been achieved.

The Erosion Control Plan was developed to remedy the surface erosion that occurred at the DOPC site and to minimize future erosion. The plan presented additional surface water diversion structures, additional surface water conveyance structures, and remedial actions such as regrading and revegetating the areas impacted by surface drainage. The erosion control measures recommended for the site by the Escambia Soil and Water Conservation District provided the basis for the plan. Erosion controls include diversion berms, surface and subsurface drains, underground pipes for surface water conveyance, and grading and re-establishing vegetative cover in areas of concern at the site. During groundwater and surface water monitoring events, the integrity of the soil cover on the treated soils is assessed for erosion impacts. If significant erosion has occurred, a corrective action is developed and implemented to ensure the erosion is controlled and the cover meets the objectives of isolating the treated materials. Further, the erosion and sediment control measures implemented are monitored for proper and intended operation, including ensuring the integrity of diversion berms, unclogging of surface drain riser pipes, and ensuring unhindered discharge from the underground pipes. Quarterly maintenance inspections on site drainage features were conducted concurrently with the quarterly monitoring events through August 2000, and additional maintenance checks were conducted in July 2001, July 2002, and June 2003.

Monthly progress reports are submitted by the Steering Committee to USEPA and FDEP. These reports include summaries of actions taken to comply with the consent order, status of sampling results, plans and procedures completed, work planned for the upcoming month, and any problems, anticipated problems and solutions that occurred in the previous month.

O&M costs include quarterly/additional sampling events and maintenance inspections, reporting, and well abandonment. The originally estimated annual O&M costs are less than the actual annual O&M costs. In July 2001, a Summary Report for 5-Year Monitoring was prepared. This task, not originally scoped, was funded from the five-year sampling budget. O&M costs for 1999 through 2004 were provided by Parsons, the consultant to the PRPs, and are presented in Table 3.

Table 3
Operation and Maintenance Costs

Dates		Total Cost Rounded to Nearest \$1,000
From	To	
1999	2000	\$76,000
2000	2001	\$53,000
2001	2002	\$16,000
2002	2003	\$15,000
2003	2004	\$8,000

V. PROGRESS SINCE THE LAST FIVE-YEAR REVIEW

The protectiveness statement from the initial five-year review for the DOPC site stated the following:

Upon completion of the remedial action, the remedy is expected to meet the requirements of the ROD to ensure protectiveness. While the remedial action is still underway, the remedy remains protective of human health and the environment through quarterly monitoring of onsite groundwater and onsite and offsite surface water discharge.

USEPA provided recommendations for continuing quarterly monitoring and erosion control under the original O&M Plan until RAOs have been achieved as specified in the ROD.

Quarterly monitoring events were conducted for five-years from October 1995 to August 2000. Additional surface water sampling was conducted in July 2001, and groundwater and surface water sampling was conducted in July 2002 and June 2003 at the site. Results from the additional sampling show contaminants of concern at concentrations below ARARs.

VI. FIVE-YEAR REVIEW PROCESS

The second five-year review was conducted by the USACE under guidance from the USEPA Remedial Project Manager for the DOPC site. The five-year review process consisting of administrative components, document review, data review, site inspection, and interviews is described in the following subsections.

ADMINISTRATIVE COMPONENTS

The DOPC Site Five-Year Review was led by Sheri Zettle of the USACE. FDEP, Steering Committee Chairman, Parsons, and the DOPC Community Involvement Coordinator were notified of the initiation of the five-year review for the DOPC site. A schedule was established to include document review, data review, site inspection, interviews, and report development.

DOCUMENT REVIEW

This second five-year review consisted of a review of relevant documents including decision documents, monitoring reports, monthly reports, and O&M records. Attachment 2 provides a list of all documents reviewed for this effort. RAOs established in the ROD were also reviewed and compared to current ARARs (see Section VII).

DATA REVIEW

Historical data were reviewed based on current ARARs for the site. According to Chapter 62-770, Petroleum Contamination Site Cleanup Criteria of the Florida Administrative Code (F.A.C.), the following criteria applies to the site:

“...if the site’s groundwater contamination is affecting or may potentially affect a freshwater surface water body based on monitoring well data, groundwater flow rate and direction, or fate and transport modeling, then the cleanup target levels referenced in Chapter 62-777, F.A.C., Table I, freshwater surface water criteria column shall also apply to groundwater...”

The springs onsite, which fill the North Pond and southern pond areas, originate from the perched water table. Groundwater data from the shallow wells and the surface water data were compared to criteria established by Chapter 62-777 and Chapter 62-302 F.A.C., Class III fresh water. The criteria in Chapter 62-302 are based on an “Annual avg.” defined as “the maximum concentration at average annual flow conditions.” These requirements were not in affect at the time the ROD was signed, and data has not been collected to determine annual average flow conditions at the site. Surface water ARARs are presented in Section VII.

Volatile Organic Compounds

Since the initial five-year review in September 1998, VOC contaminants of concern have been detected above ARARs at only one location, surface water location SF1. See Figure 2 in Attachment 1. VOC detections at all other locations have been below current ARARs.

TCE was detected at surface water location SF1 at concentrations above ARARs for several quarterly sampling events (third quarter of 1999 through third quarter of 2000). TCE concentrations dropped below the ARAR during the July 2002 sampling event and were non-detect during the June 2003 sampling event. See the concentration versus time plot for TCE at SF1 provided in Attachment 3.

PCP was detected above ARARs at surface water location SF1 during several sampling events (third quarter of 1999 through third quarter of 2001). Over the last five years, concentrations have fluctuated from non-detect to 8.4 µg/L. PCP concentrations were non-detect for the sampling events in July 2002 and June 2003 sampling event. See the concentration versus time plot provided for PCP at SF1 in Attachment 3.

Groundwater and surface water sampling data for VOCs have been in compliance with the current ARARs since July 2002.

Semi-Volatile Organic Compounds

Since the first quarter of 1998, SVOCs have been below ARARs for groundwater and surface water samples with the exception of detections of acenaphthylene at SF1 and phenanthrene at MW15S. At SF1, acenaphthylene was detected at 1.8 µg/L for the fourth quarter of 1997 and 1.2 µg/L for the third quarter of 2000. A concentration versus time plot for acenaphthylene at SF1 is provided in Attachment 3. These isolated hits of acenaphthylene are anomalous and only slightly above the detection limit. Acenaphthylene concentrations were below the detection limit for the

additional surface water sampling data collected at SF1 in July 2001. SVOC analysis was discontinued for groundwater and surface water samples following the sampling in July 2001.

Historical detections of phenanthrene at MW15S have exceeded the ARAR for several sampling events since the second quarter of 1996. A concentration versus time plot for phenanthrene at MW15S is presented in Attachment 3. Monitoring well MW15S is located up gradient from surface water sampling locations SF1 and SF2; however, surface water concentrations of phenanthrene at SF1 have been below detection limits since the first quarter of 1998 and have been non-detect at SF2. Concentrations of phenanthrene detected at MW15S are apparently being naturally attenuated, because phenanthrene has not been detected in surface water since February 1998.

SITE INSPECTION

The site inspection was conducted at 10:30 AM on July 17, 2003, by Sheri Zettle (USACE), Mark Fite (USEPA), Leona Miles (FDEP), and Robert Ariatti (Steering Committee Chairman). A representative from Parsons was not available for the site inspection. The purpose of the inspection was to assess the protectiveness of the remedy. Notes and observations from the site inspection were recorded on the Site Inspection Check List provided in Attachment 4. Photographs were taken by Sheri Zettle and are provided in Attachment 5.

No issues were identified regarding the erosion and sediment control measures. The site has good vegetative cover (Photograph 1), and the diversion berms are in good condition (Photograph 2). No major areas of erosion were noted. Two ponds exist at the site, the North Pond and a smaller pond to the south (Photograph 3). Surface water, which collects in the southern pond, flows via subsurface pipes into the North Pond (Photograph 4). Surface water samples are collected from the southern pond (Photograph 5) and the discharge from the North Pond, or point of compliance (Photograph 6).

The fencing around the property was undamaged and functional. Warning signs are posted along the fence line (Photograph 7). Signs have fallen off the fence and should be re-posted (Photograph 8). The water treatment equipment is still located onsite (Photograph 9). The water treatment equipment should be removed from the site, as the equipment is no longer in use.

The groundwater monitoring wells identified during the site inspection included MW1S, MW3S, MW4S, MW7S, MW15S, and MW16S. (Photographs 10 through 15). One unidentified well to the east of MW4S was also located (Photograph 16). The identity of this monitoring well should be determined. In general, the condition of the monitoring wells is poor. The steel sleeves surrounding the casings have rusted, and guard posts are missing from several of the well locations. The steel sleeve cover for well MW16S will not close, and water has filled the sleeve above the casing cap. The groundwater monitoring wells should be rehabilitated or abandoned. In addition, all monitoring wells, except for the unidentified well, were not secured with a lock. Locks should be provided for all monitoring wells at the site.

The site inspection demonstrated that the O&M activities were carried out in accordance with the ROD. The O&M activities are supporting an effective remedy at the DOPC site, and no

unexpected changes in O&M scope or cost have occurred to suggest ineffectiveness of the remedy.

INTERVIEWS

During five-year review process, several individuals were interviewed concerning the DOPC site with regard to activities over the last five years. The following individuals were interviewed:

- Mrs. Betty Dubose is the wife of the deceased Earl Dubose and resides at the site. She was interviewed following the site inspection on July 17, 2003. Mrs. Dubose did not identify any significant problems or issues with the site. Details of her interview responses are provided in Attachment 6.
- Leona Miles is the FDEP Project Manager for the DOPC site. She was interviewed on the afternoon of July 17, 2003, following the site inspection. Ms. Miles did not identify any significant problems or issues with the site. Details of her interview responses are provided in Attachment 6.
- Robert Ariatti is the Steering Committee Chairman. He was interviewed on August 12, 2003. Mr. Ariatti did not identify any significant problems or issues with the site. Details of his interview responses are provided in Attachment 6.
- John Whitehurst is the property owner to the north of the DOPC site. He was interviewed on August 12, 2003. Mr. Whitehurst expressed concerns regarding his health, the health of his family, and other community members. He is concerned that his exposure to chemicals from the site as a child via the stream to the north of the property has caused his current health problems. Details of Mr. Whitehurst's interview are provided in Attachment 6.

Several attempts were made to interview an individual from Parsons; however, interviews were declined and phone calls and messages were never answered.

VII. TECHNICAL ASSESSMENT

The following Questions A, B, and C were answered to provide a technical assessment of the site remedy.

QUESTION A: IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENTS?

Remedial Action Performance

The remedy at the DOPC site is effective and functioning as designed to protect human health and the environment. This conclusion is based on the review of site documents, groundwater and surface water monitoring data, ARARs, risk assumptions, and results from the site inspection.

The remedial action of natural attenuation has been effective in reducing the contaminant concentrations in groundwater and surface water to achieve ARARs. Based on the data review, the North Pond discharge water has been in compliance with ARARs since the fourth quarter of 1996. Groundwater and surface water sampling data from all other sampling locations have been in compliance with the ARARs since July 2002; however, SVOCs have not been sampled at MW15S since the third quarter of 2000. The natural attenuation remedy is effective and continued compliance can be expected without additional action.

System Operations

The site inspection demonstrated that O&M activities have continued in accordance with the ROD. All O&M requirements are adequate for the site and are being implemented properly. Quarterly monitoring of groundwater and surface water is effectively ensuring the remedy is performing properly. No unexpected changes have occurred in cost or scope of the O&M to suggest compromised effectiveness of the remedy.

Routine maintenance should be conducted including the following: monitoring wells need to be rehabilitated; inventory of monitoring wells should be updated; unlabeled monitoring well should be identified; monitoring wells should be secured with a lock; signs that have fallen from the fencing should be re-posted.

Opportunities for Optimization

Opportunities for optimization were not identified during this review. The groundwater and surface water sampling locations provide sufficient data to assess the progress of the natural attenuation.

Early Indicators of Potential Issues

No early indicators of potential issues that could lead to remedy failure or jeopardize the protectiveness were identified during this five-year review.

Implementation of Institutional Controls and Other Measures

The institutional and access controls in place at the site provide adequate protection. No other actions were identified for the site.

QUESTION B: ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS, AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDY STILL VALID?

Changes in Standards

The clean-up levels established in the ROD have been revised significantly by the Florida Primary and Secondary Standards defined in Chapters 62-302, 62-520, 62-550, 62-770 and 62-777 of the Florida Administrative Code. Tables 4A and 4B provide a comparison of the RAOs with the current ARARs for groundwater and surface water, respectively. The existing remedy has achieved the new standards for protectiveness of human health and the environment. This statement is verified by the lack of detections of contaminants of concern at the point of compliance.

Changes in Exposure Pathways

Significant changes have not occurred at the site to affect the exposure pathways. The protectiveness of the RAOs is still valid. The contaminants of concern remain the same, as well as the land usage and human usage of resources.

Changes in Toxicity and Other Contaminant Characteristics

Toxicity factors and other characteristics for contaminants of concern have not changed at the site to affect the protectiveness of the remedy.

Changes in Risk Assessment Methods

As part of the RI/FS, a baseline risk assessment was performed at the site; however, an ecological risk assessment was not conducted. USEPA has conducted a screening-level ecological risk assessment to confirm the remedy is protective of the environment.

Expected Progress Towards Meeting RAOs

The site remedy is progressing as expected. The remedy has achieved compliance with the new standards and RAOs have been met.

Table 4A
Summary of RAOs and Current ARARs for
Chemical-Specific Standards for Groundwater

		Record of Decision RAOs			Current ARARs	
Contaminant	RAO	Source	Year	ARAR	Source	Year
Benzene	1 µg/L	Florida Groundwater Standard	1990	1 µg/L	Florida Primary Standard ¹	1999
1,1-Dichloroethene	7 µg/L	Florida Groundwater Standard	1990	7 µg/L	Florida Primary Standard	1999
Pentachlorophenol	30 µg/L	Florida Groundwater Standard	1990	1 µg/L	Florida Primary Standard	1999
Trichloroethene	3 µg/L	Florida Groundwater Standard	1990	3 µg/L	Florida Primary Standard	1999
Xylenes (Total)	50 µg/L	Florida Groundwater Standard	1990	20 µg/L	Florida Secondary Standard ²	1999
Polynuclear Aromatic Compounds ³	10 µg/L	1990 achievable detection limit	1990	See individual polynuclear aromatic compounds listed below.		
Acenaphthene	See Note 3.	See Note 3.		20 µg/L	Ch. 62-777, F.A.C.	1999
Acenaphthylene				210 µg/L	Ch. 62-777, F.A.C.	1999
Anthracene				2100 µg/L	Ch. 62-777, F.A.C.	1999
Benzo(a)anthracene				0.2 µg/L	Ch. 62-777, F.A.C.	1999
Benzo(a)pyrene				0.2 µg/L	Ch. 62-550, F.A.C.	1998
Benzo(b)fluoranthene				0.2 µg/L	Ch. 62-777, F.A.C.	1999
Benzo(g,h,i)perylene				210 µg/L	Ch. 62-777, F.A.C.	1999
Benzo(k)fluoranthene				0.5 µg/L	Ch. 62-777, F.A.C.	1999
Chrysene				4.8 µg/L	Ch. 62-777, F.A.C.	1999
Fluoranthene				280 µg/L	Ch. 62-777, F.A.C.	1999
Fluorene				280 µg/L	Ch. 62-777, F.A.C.	1999
Indeno(1,2,3-cd)pyrene				0.2 µg/L	Ch. 62-777, F.A.C.	1999
2-Methylnaphthalene				20 µg/L	Ch. 62-777, F.A.C.	1999
Naphthalene				20 µg/L	Ch. 62-777, F.A.C.	1999
Phenanthrene				210 µg/L	Ch. 62-777, F.A.C.	1999
Pyrene				210 µg/L	Ch. 62-777, F.A.C.	1999

¹Florida Primary Standard provided in Chapters 62-520 and 62-550, Florida Administrative Code.

²Florida Secondary Standard provided in Chapter 62-785, Florida Administrative Code.

³The 1990 ROD set the RAO for polynuclear aromatic compounds at 10 µg/L (the achievable detection limit in water for USEPA Method 8270 in 1990). Current ARARs consist of the individual or total standards established for the polynuclear aromatic compounds provided in Chapters 62-550 and 62-777, Florida Administrative Code.

Ch. = Chapter

F.A.C. = Florida Administrative Code

µg/L = micrograms per liter

Table 4B
Summary of RAOs and Current ARARs for
Chemical-Specific Standards for Surface Water¹

		Record of Decision RAOs			Current ARARs	
Contaminant	RAO	Source	Year	ARAR	Source	Year
Benzene	1 µg/L	Florida Groundwater Standard	1990	≤ 71.28 µg/L annual avg.	Ch. 62-302, F.A.C. ²	1996
1,1-Dichloroethene	7 µg/L	Florida Groundwater Standard	1990	≤ 3.2 µg/L annual avg.	Ch. 62-302, F.A.C.	1996
Pentachlorophenol	30 µg/L	Florida Groundwater Standard	1990	≤ 30 µg/L max; ≤ 8.2 µg/L annual avg.; <e(1.005[pH]-5.29)	Ch. 62-302, F.A.C.	1996
Trichloroethene	3 µg/L	Florida Groundwater Standard	1990	≤ 80.7 µg/L annual avg.	Ch. 62-302, F.A.C.	1996
Xylenes (Total)	50 µg/L	Florida Groundwater Standard	1990	370 µg/L	Ch. 62-777, F.A.C.	1999
Polynuclear Aromatic Compounds ¹	10 µg/L	1990 achievable detection limit	1990	See individual polynuclear aromatic compounds listed below.		
Acenaphthene	See Note 3.			3 µg/L	Ch. 62-777, F.A.C.	1999
Anthracene				0.3 µg/L	Ch. 62-777, F.A.C.	1999
Fluoranthene				0.3 µg/L	Ch. 62-777, F.A.C.	1999
Fluorene				30 µg/L	Ch. 62-777, F.A.C.	1999
2-Methylnaphthalene				30 µg/L	Ch. 62-777, F.A.C.	1999
Naphthalene				26 µg/L	Ch. 62-777, F.A.C.	1999
Pyrene				0.3 µg/L	Ch. 62-777, F.A.C.	1999
Total of: Acenaphthylene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Indeno(1,2,3-cd)pyrene Phenanthrene	See Note 3.			Total less than: 0.031 µg/L annual avg.	Ch. 62-302, F.A.C.	1996

¹Ch. 62-770 provides criteria and guidance for petroleum contamination site cleanup.

²Chapter 62-302.530, Criteria for Surface Water Quality Classifications, Class III, Predominantly Fresh Waters.

³The 1990 ROD set the RAO for polynuclear aromatic compounds at 10 µg/L (the achievable detection limit in water for USEPA Method 8270 in 1990). Current ARARs consist of the individual or total standards established for the polynuclear aromatic compounds provided in Chapters 62-302, 62-550 and 62-777, Florida Administrative Code.

Ch. = Chapter

F.A.C. = Florida Administrative Code

annual avg. = the maximum concentration at average annual flow conditions.

QUESTION C: HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

No other information has been identified during this five-year review that calls into question the protectiveness of the remedy.

TECHNICAL ASSESSMENT SUMMARY

According to the data reviewed, site inspection, and interviews, the remedy is functioning as intended by the ROD. The only change affecting the site is the revised ARARs. The existing remedy has achieved the new standards, and so the protectiveness of human health and the environment has not been called into question. No other information was found during the five-year review of the DOPC site to indicate the remedy is not protective.

VIII. ISSUES

Table 5 presents issues that need to be resolved at the DOPC site.

Table 5
Issues

Issue	Currently Affects Protectiveness (Yes/No)	Affects Future Protectiveness (Yes/No)
Poor condition of monitoring wells – rusted sleeves, missing guard posts, sleeve covers rusted open.	No	No
Unidentified monitoring well to the east of MW4S.	No	No
Monitoring wells not secured with locks.	No	No
Signs fallen off of fencing.	No	No

IX. RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Table 6 provides recommendations and follow-up actions to address the issues presented in Section VIII.

Table 6
Recommendations and Follow-Up Actions

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Yes/No)	
					Current	Future
Condition of Monitoring Wells	Rehabilitate or abandon wells	PRPs	USEPA	3/30/04	No	No
Unidentified Well	Conduct a complete inventory of existing and abandoned monitoring wells	PRPs	USEPA	3/30/04	No	No
Unsecured Monitoring Wells	Locks should be provided for all monitoring wells	PRPs	USEPA	11/30/03	No	No
Signs	Signs should be re- posted on fencing	PRPs	USEPA	11/30/03	No	No

To ensure protectiveness, annual groundwater and surface water monitoring should continue until the next five-year review or until the site is de-listed. All monitoring wells on site should be abandoned prior to de-listing the site.

X. PROTECTIVENESS STATEMENT

The remedy at the DOPC site remains protective of human health and the environment. The remedy of natural attenuation has attained groundwater and surface water cleanup goals specified in the ROD. In order to verify long term protectiveness, annual groundwater and surface water monitoring should continue until the next five-year review or until the site is de-listed.

XI. NEXT REVIEW

The next five-year review for the DOPC site is required by September 2008, five years from the date of this review.

ATTACHMENTS

ATTACHMENT 1

SITE MAPS

FIGURE 1

SITE LOCATION

DUBOSE OIL PRODUCTS COMPANY SITE

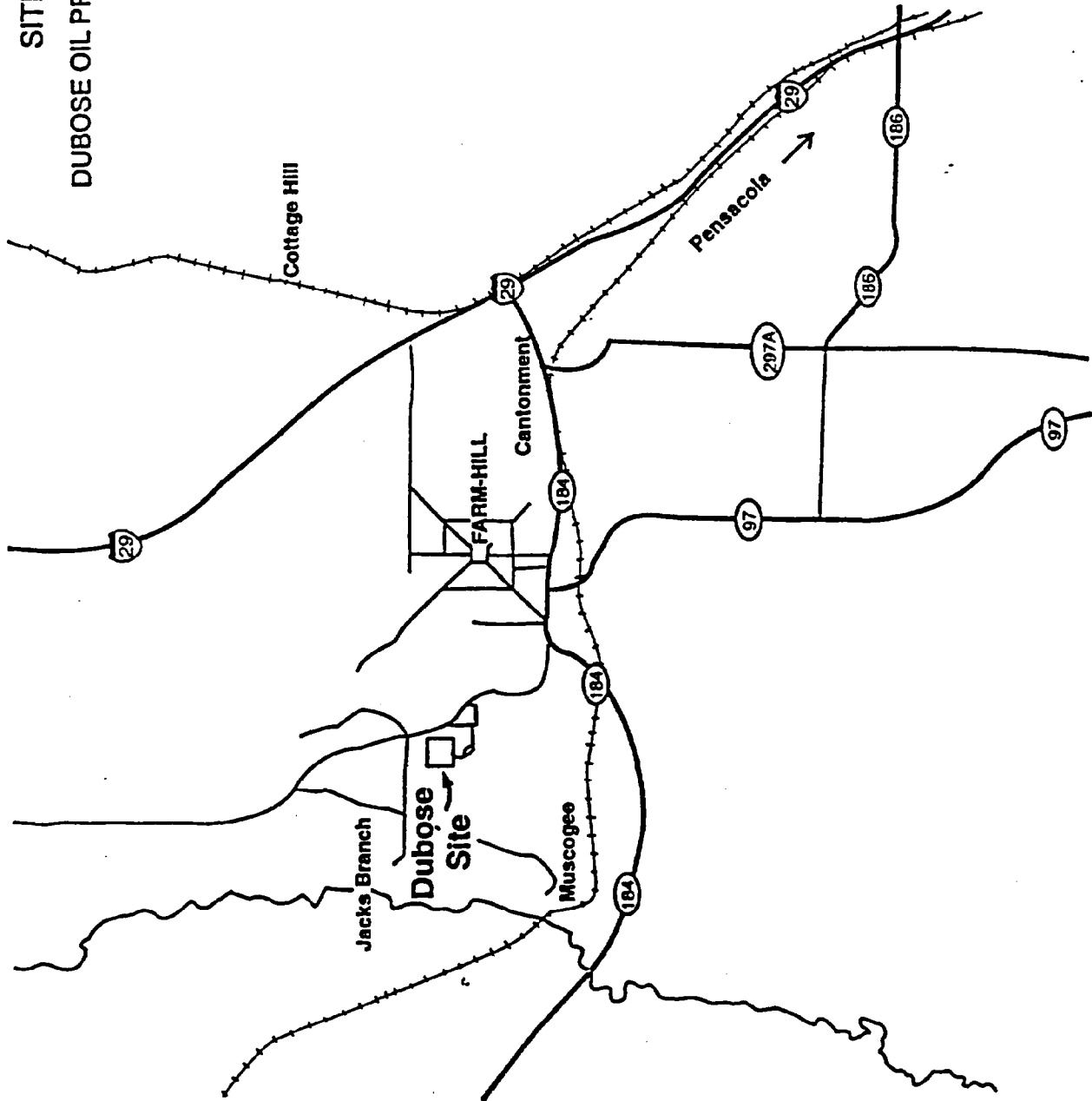
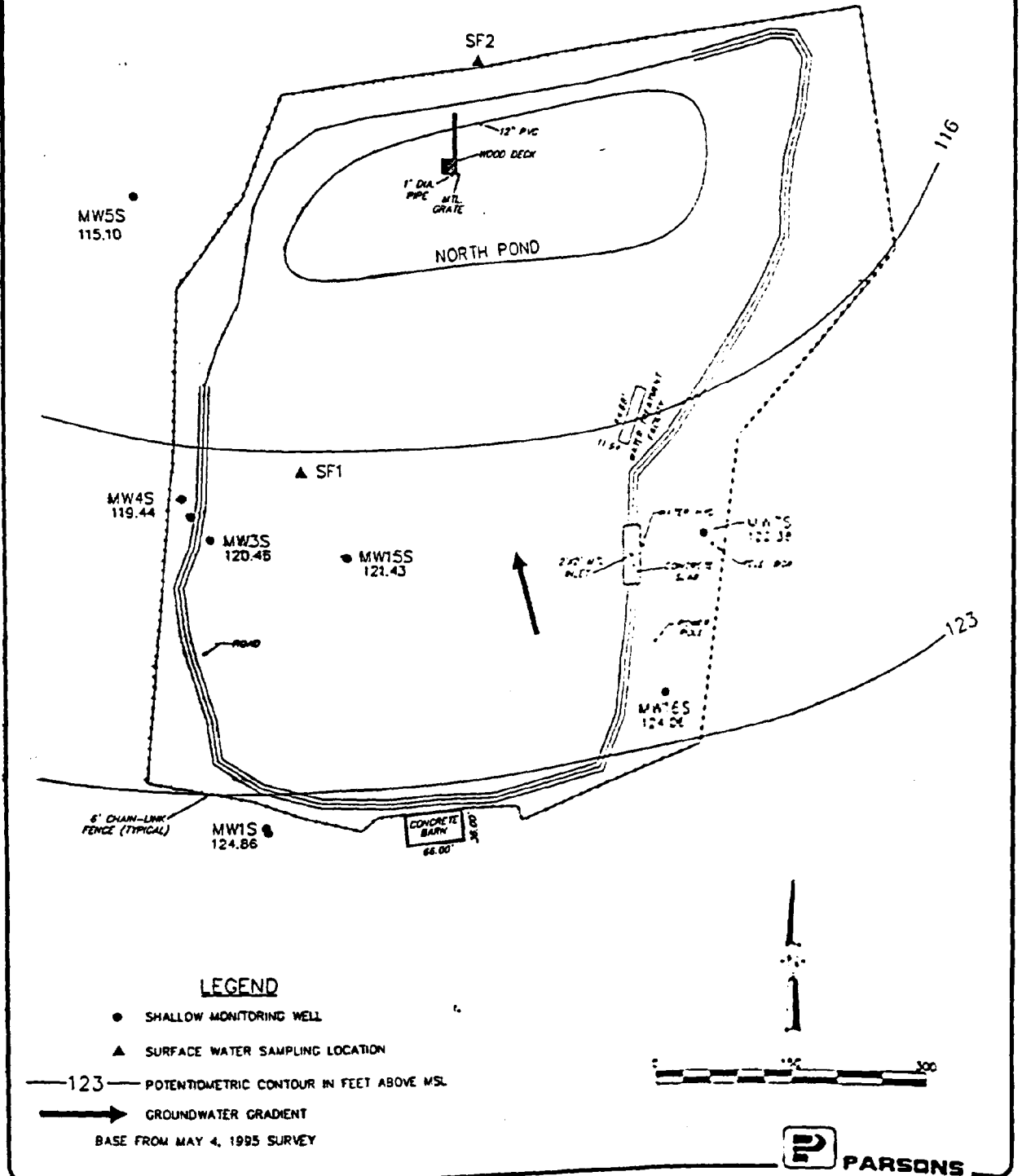


Figure 2
 POTENTIOMETRIC SURFACE
 PERCHED WATER TABLE AQUIFER
 DUBOSE OIL PRODUCTS COMPANY SITE
 JUNE, 2003



ATTACHMENT 2
LIST OF DOCUMENTS REVIEWED

Documents Reviewed

- Engineering-Science, 1990, Final Draft Feasibility Study Report, Dubose Oil Products Company Site, Cantonment, Florida, January 1990.
- Florida Department of Health and Rehabilitation Services, 1990, Full Health Assessment, Dubose Oil Products Site, February 1990.
- Parsons Engineering Science, 1995, Dubose Oil Products Company Site Initial Groundwater and Surface Water Monitoring Report, January 1995.
- Parsons Engineering Science, 2000, Dubose Oil Products Company Site Quarterly Groundwater and Surface Water Monitoring Report for First Quarter of 2000, June 2000.
- Parsons Engineering Science, 2000, Dubose Oil Products Company Site Quarterly Groundwater and Surface Water Monitoring Report for Second Quarter of 2000, September 2000.
- Parsons Engineering Science, 2000, Dubose Oil Products Company Site Quarterly Groundwater and Surface Water Monitoring Report for Third Quarter of 2000, December 2000.
- Parsons Engineering Science, 2001, Dubose Oil Products Company Superfund Site, Groundwater and Surface Water Monitoring Summary Report, January 2001.
- Parsons Engineering Science, 2001, Dubose Oil Products Company Site Additional Surface Water Sampling Event, July 2001.
- Parsons Engineering Science, 2002, Project Review, Dubose Oil Products Company Site, Dubose Oil Products Company Steering Committee, February 2002.
- Parsons, 2002, Dubose Oil Products Company Site Additional Groundwater and Surface Water Sampling Event, July 2002.
- Parsons, 2003, Dubose Oil Products Company Site Additional Groundwater and Surface Water Sampling Event, June 2003.
- U.S. District Court for the Northern District of Florida, 1991, Consent Decree, Civil Action No.: 91-30070RV, June 1991.
- U.S. Environmental Protection Agency, 1990, Record of Decision, Summary of Remedial Alternative Selection, Dubose Oil Products Site, Cantonment, Escambia County, Florida, March 1990.
- U.S. Environmental Protection Agency, 1995, Superfund Preliminary Closeout Report, Dubose Oil Products Company, Cantonment, Florida, September 1995.

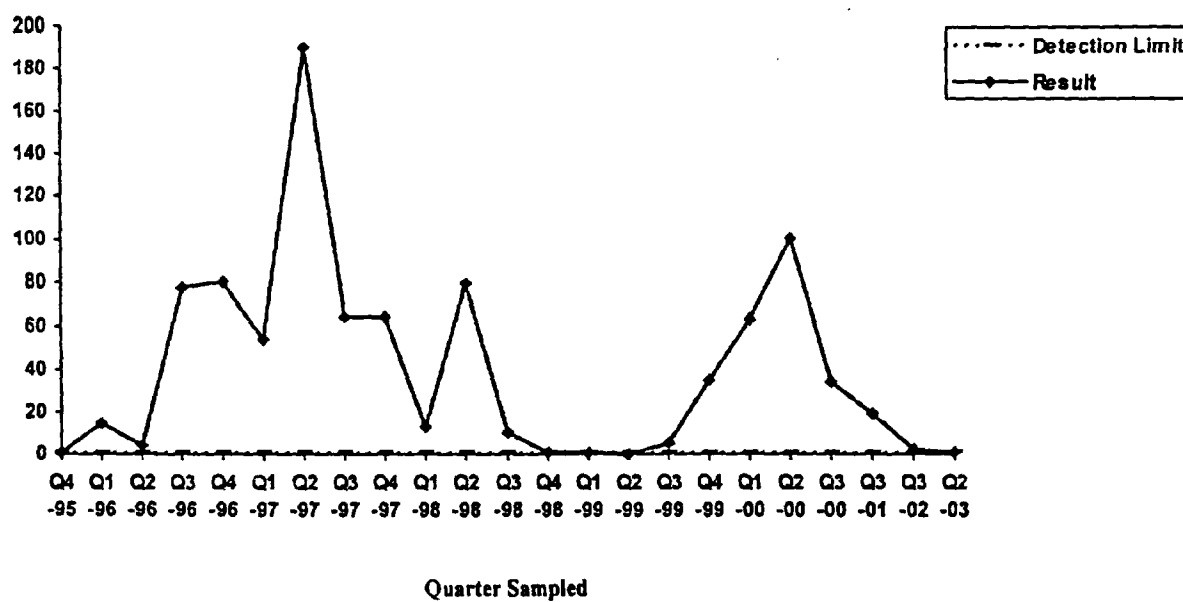
U.S. Environmental Protection Agency, 1998, Five-Year Review, Dubose Oil Products Company Superfund Site, September 1998.

ATTACHMENT 3

CONCENTRATION VERSUS TIME PLOTS

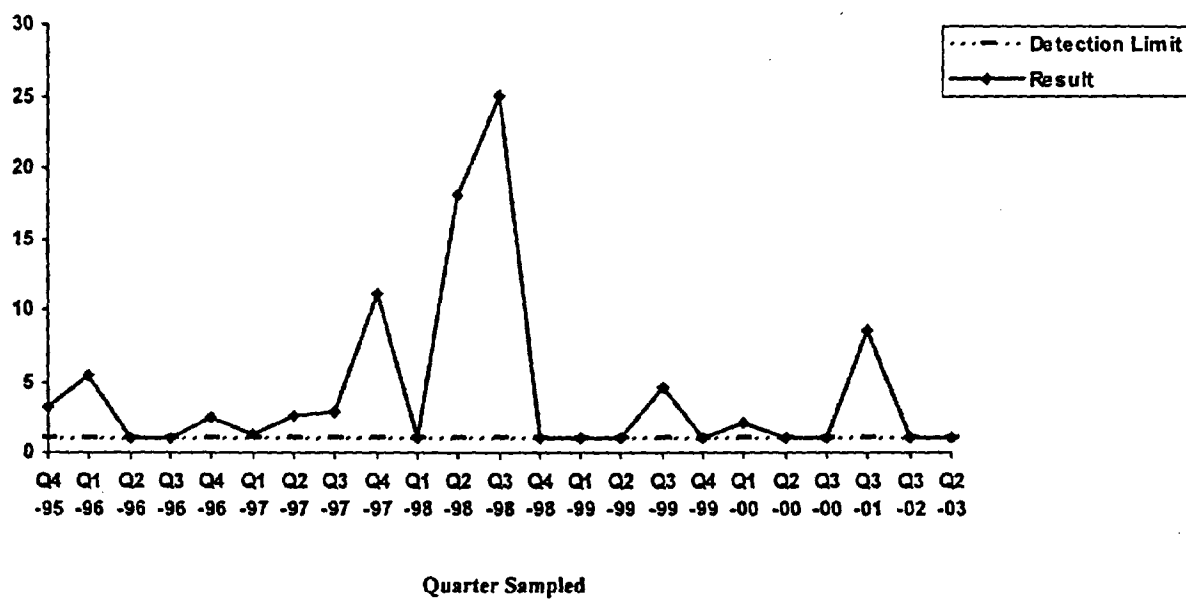
Surface Water Location SWD-SF1
Trichloroethylene (ug/L)
Concentration Vs Time

Detection Limit (except where noted): 1 ug/L



Surface Water Location SWD-SF1
Pentachlorophenol (ug/L)
Concentration Vs Time

Detection Limit (except where noted): 1 ug/L



ATTACHMENT 4
SITE INSPECTION CHECK LIST

I. SITE INFORMATION	
Site Name: Dubose Oil Products Company Site	Date of Inspection: July 17, 2003
Location and Region: Cantonment, FL	USEPA ID: FLD000833368
Agency, office or company leading the five-year review: U.S. Army Corps of Engineers	Weather/temperature: Partly cloudy and humid
Remedy Includes (Check all that apply) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 45%;"> <input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </div> <div style="width: 45%;"> <input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </div> </div>	
<input checked="" type="checkbox"/> Inspection team roster provided in Five-Year Review Report <input checked="" type="checkbox"/> Site map provided in Attachment 1	
II. INTERVIEWS (Check all that apply)	
1. O&M Site Manager <u>N/A</u> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached	
2. O&M Staff <u>N/A</u> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached	
3. Local regulatory authorities and response agencies (i.e., State and Tribal Offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. <div style="margin-top: 10px;"> Agency: <u>Florida Department of Environmental Protection</u> Contact: <u>Leona Miles</u> <u>Project Manager</u> <u>17 July 2003</u> <div style="display: flex; justify-content: space-around; margin: 5px 0;"> Name Title Date </div> Problems, suggestions: <input checked="" type="checkbox"/> Report provided in Attachment 6 </div>	

4. Other Interviews: <input checked="" type="checkbox"/> Reports provided in Attachment 6		
<ul style="list-style-type: none"> ○ Mrs. Betty Dubose ○ Robert J. Ariatti, Jr. ○ John Whitehurst 	<ul style="list-style-type: none"> Site Resident Steering Committee Chairman North Property Neighbor 	<ul style="list-style-type: none"> 17 July 2003 12 August 2003 12 August 2003
III. ON-SITE DOCUMENTS & RECORD VERIFIED (Check all that apply)		
1. O&M Documents <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> As-builts <input type="checkbox"/> Maintenance Logs </div> <div> <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available </div> <div> <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date </div> <div> <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A </div> </div> Remarks _____ _____		
2. Site Specific Health and Safety Plan <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Contingency Plan/Emergency Response Plan <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks _____ _____		
3. O&M and OSHA Training Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks _____ _____		
4. Permits and Service Agreements <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Air Discharge Permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ </div> <div> <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available </div> <div> <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date </div> <div> <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A </div> </div> Remarks: <u>Permitting is not required for the effluent discharge from the North Pond based on conversations with Leona Miles with FDEP 8/18/03.</u>		
5. Gas Generation Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks _____ _____		
6. Settlement Monument Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks _____ _____		

7. Groundwater Monitoring Records <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A Remarks: <u>The monitoring report for the June 2003 Groundwater and Surface Water Sampling Event was provided by the PRP.</u>
8. Leachate Extraction Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____
9. Discharge Compliance Records <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent) </div> <div> <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A </div> </div> Remarks: <u>Discharge compliance records are not required for the effluent from the North Pond based on conversations with Leona Miles with FDEP 8/18/03.</u>
4. O&M COSTS
1. O&M Organization <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> State in-house <input type="checkbox"/> PRP in-house <input type="checkbox"/> Other _____ </div> <div> <input type="checkbox"/> Contractor for State <input checked="" type="checkbox"/> Contractor for PRP </div> </div>
2. O&M Cost Records <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place <input checked="" type="checkbox"/> Original O&M cost estimate: <u>\$181,000</u> Total annual costs provided for 1999 through 2003. <input checked="" type="checkbox"/> Breakdown provided in Five-Year Review Report.
3. Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons: <u>None noted by Contractor to PRP.</u>
V. ACCESS AND INSTITUTIONAL CONTROLS
A. Fencing
1. Fencing damaged <input type="checkbox"/> Location shown on map <input checked="" type="checkbox"/> Gates secured <input type="checkbox"/> N/A Remarks: <u>Fence in good repair.</u>

B. Other Access Restrictions
1. Signs and other security measures <input type="checkbox"/> Location shown on map <input type="checkbox"/> N/A Remarks: <u>All required signs and warnings are posted on fencing. Signs have fallen off of fencing and need to be re-posted.</u>
C. Institutional Controls (ICS) <input checked="" type="checkbox"/> N/A
D. General
1. Vandalism/trespassing <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident Remarks: _____
2. Land use changes on site <input checked="" type="checkbox"/> N/A Remarks: _____
3. Land use changes off site <input checked="" type="checkbox"/> N/A Remarks: _____
VI. GENERAL SITE CONDITIONS
A. Roads <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A
1. Roads damaged <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N/A Remarks: <u>Dirt roads on the site are in good condition.</u>
B. Other Site Conditions <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A Remarks: _____
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
A. Landfill Surface <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable

C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
F. Cover Drainage Layer <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
H. Retaining Walls <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
I. Ponds/Off-Site Discharge <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable
1. Siltation <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Siltation not evident Remarks _____
2. Vegetative Growth <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Vegetation does not impede flow Remarks _____
3. Erosion <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident Remarks _____
4. Discharge Structure <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____
VIII. VERTICAL BARRIERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
IX. GROUNDWATER/SURFACE WATER REMEDIES
A. Groundwater extraction wells, pumps and pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable

B. Surface water collection structures, pumps and pipelines <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable
1. Collection Structures, Pumps and Electrical <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M Remarks: _____
2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M Remarks: _____
3. Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good Condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided <input checked="" type="checkbox"/> N/A Remarks: <u>Pipelines are gravity fed; spare parts and equipment not applicable.</u>
C. Treatment System <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
D. Monitored Natural Attenuation
1. Monitoring Wells (natural attenuation remedy) <input type="checkbox"/> N/A <input type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input checked="" type="checkbox"/> Needs O&M Remarks: <u>Unknown well located east of MW4S. Identification and status needs to be determined. Remaining wells need to be rehabilitated and properly secured with a lock or abandoned.</u>
X. OTHER REMEDIES <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

The natural attenuation remedy has been effective in reducing the contaminant concentrations in groundwater and surface water to achieve ARARs. The natural attenuation remedy is effective, and continued compliance can be expected without additional action.

B. Adequacy of O&M

All O&M requirements are adequate for the site. Routine maintenance should be conducted including the following: monitoring wells need to be rehabilitated; inventory of monitoring wells should be updated; unlabeled monitoring well should be identified; monitoring wells should be secured with a lock; signs that have fallen from the fencing should be re-posted.

C. Early Indicators of Potential Remedy Problems

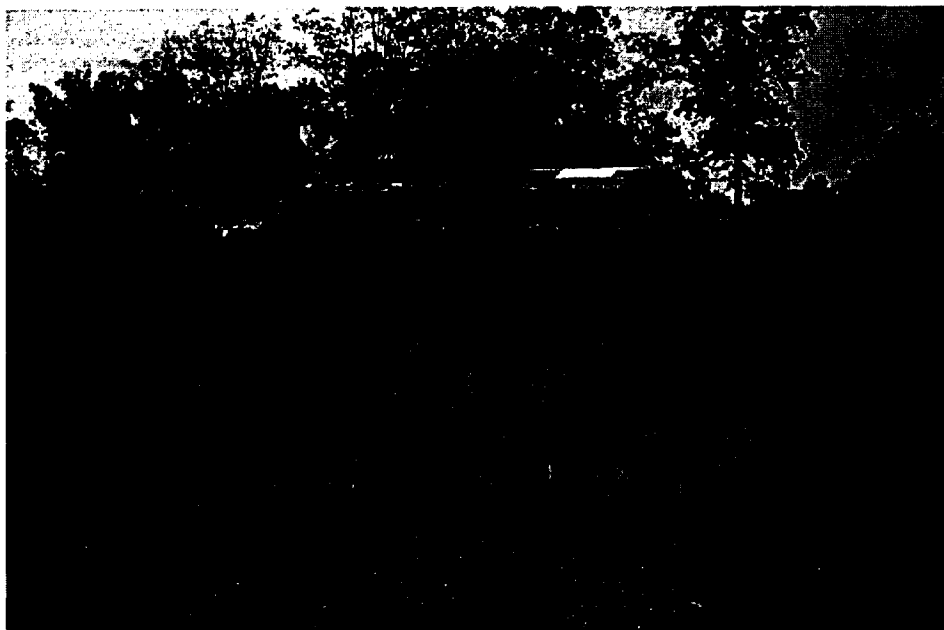
No early indicators of potential remedy problems were identified during this five-year review.

D. Opportunities for Optimization

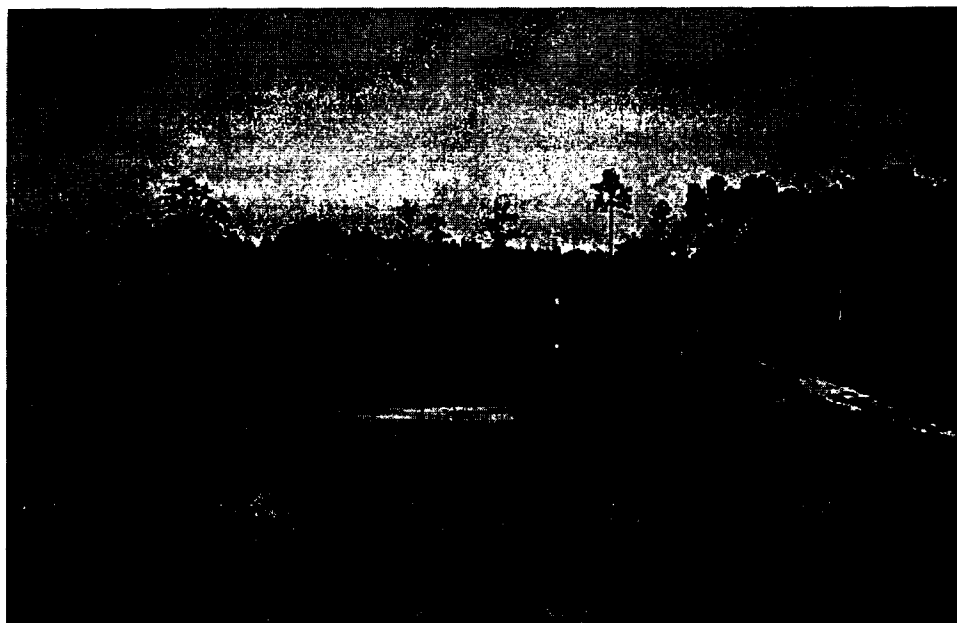
Opportunities for optimization were not identified during this review. The groundwater and surface water sampling locations provide sufficient data to assess the progress of the natural attenuation.

ATTACHMENT 5

PHOTOGRAPHS DOCUMENTING SITE CONDITIONS



PHOTOGRAPH 1. VEGETATIVE COVER, SOUTHERN END OF PROPERTY



PHOTOGRAPH 2. VEGETATIVE COVER, DIVERSION BERMS AND THE SMALL SOUTHERN POND



PHOTOGRAPH 3. THE NORTH POND (TOP) AND SMALL SOUTHERN POND



PHOTOGRAPH 4. SUBSURFACE PIPE DISCHARGING INTO NORTH POND



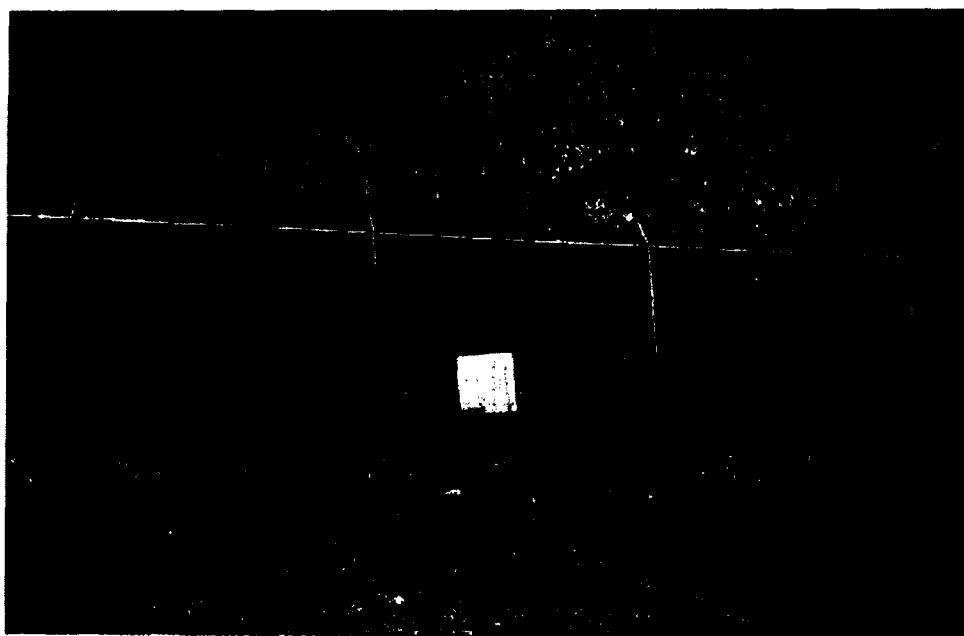
PHOTOGRAPH 5. SMALL SOUTHERN POND (LOCATION OF SF1)



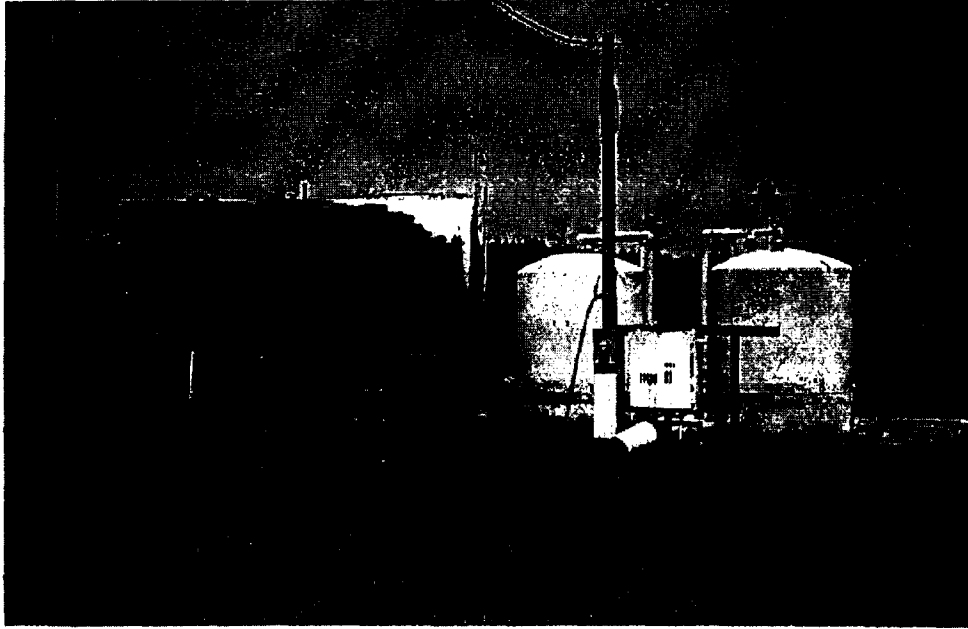
PHOTOGRAPH 6. NORTH POND DISCHARGE (POINT OF COMPLIANCE, SF2)



PHOTOGRAPH 7. TYPICAL WARNING SIGN



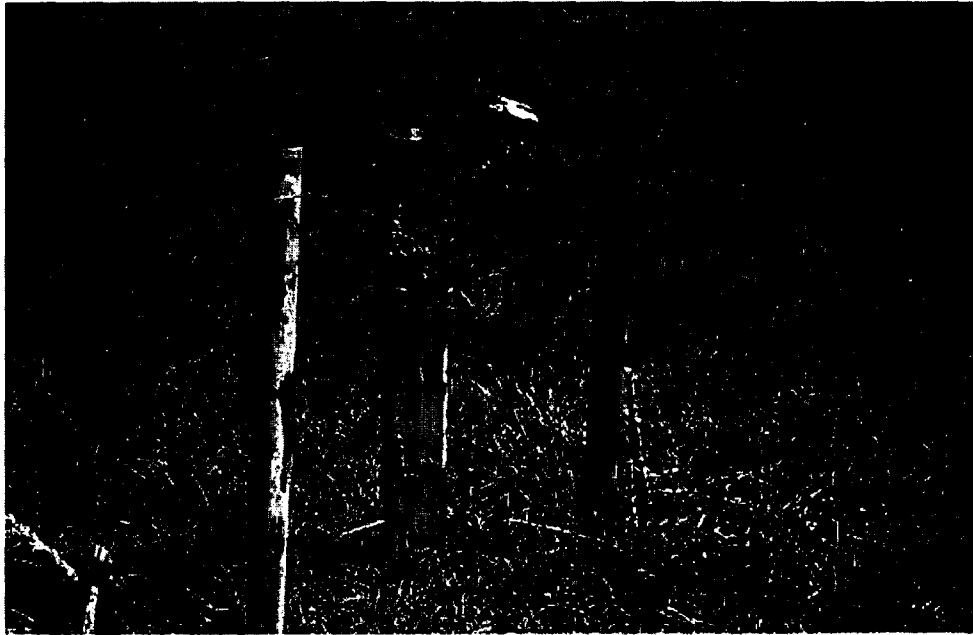
PHOTOGRAPH 8. EXAMPLE SIGN TO BE RE-POSTED



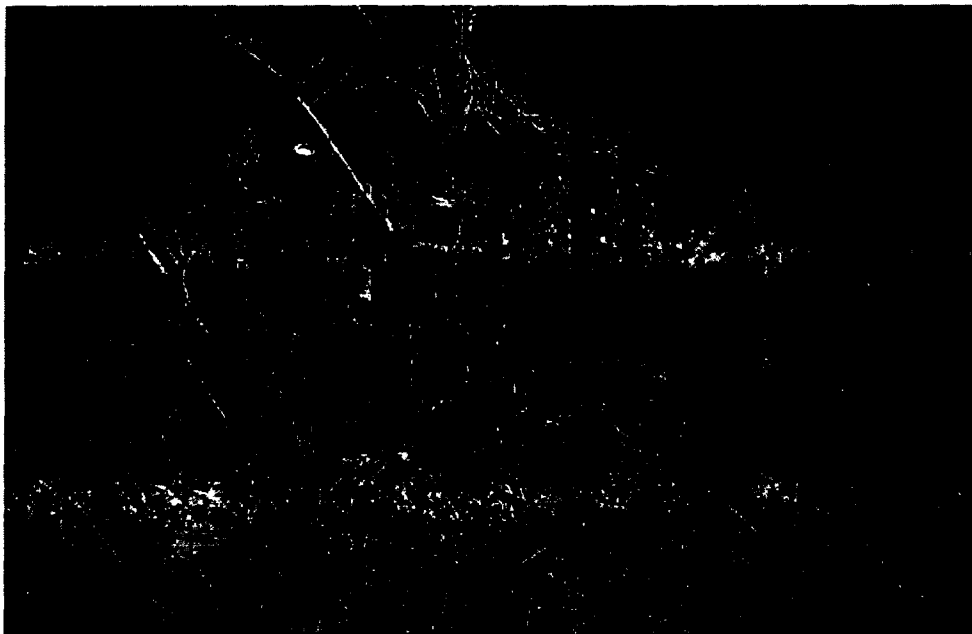
PHOTOGRAPH 9. WATER TREATMENT EQUIPMENT



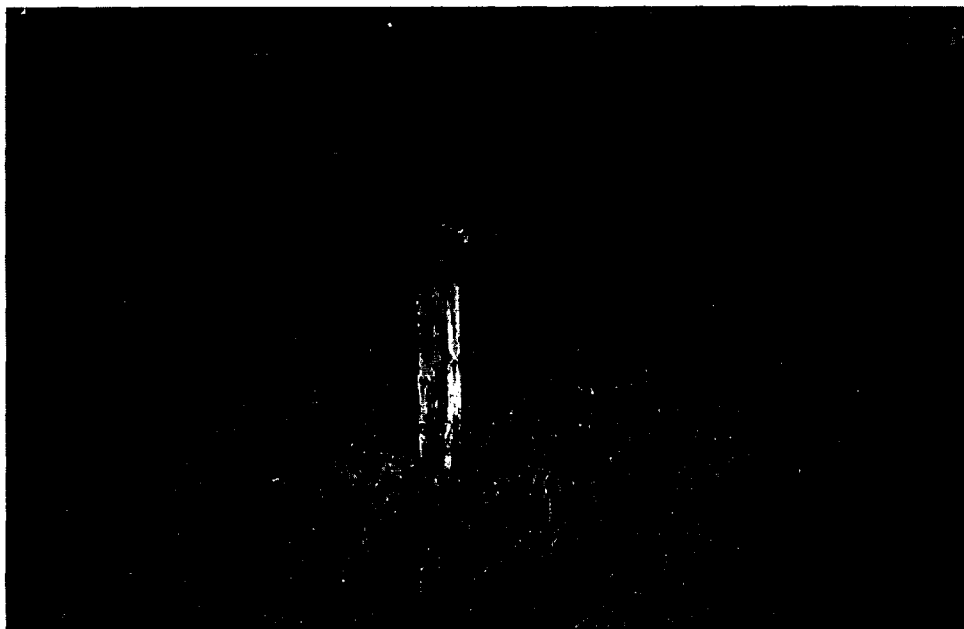
PHOTOGRAPH 10. GROUNDWATER MONITORING WELL MW1S



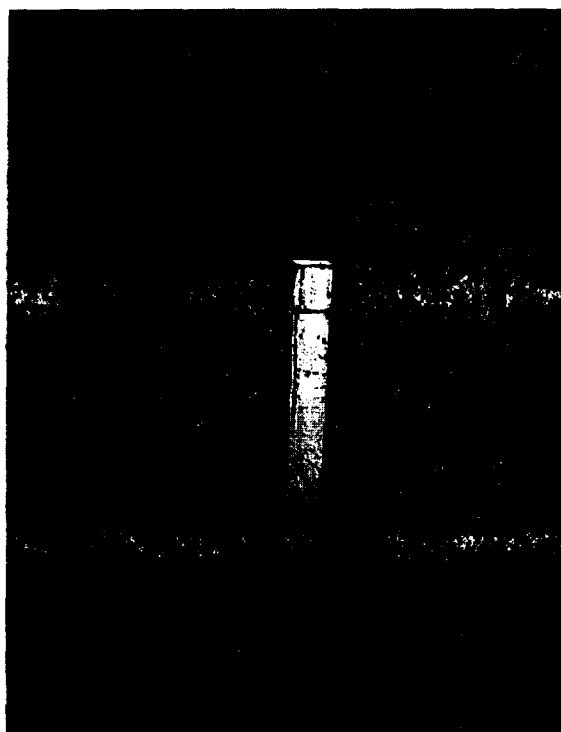
PHOTOGRAPH 11. GROUNDWATER MONITORING WELL MW3S



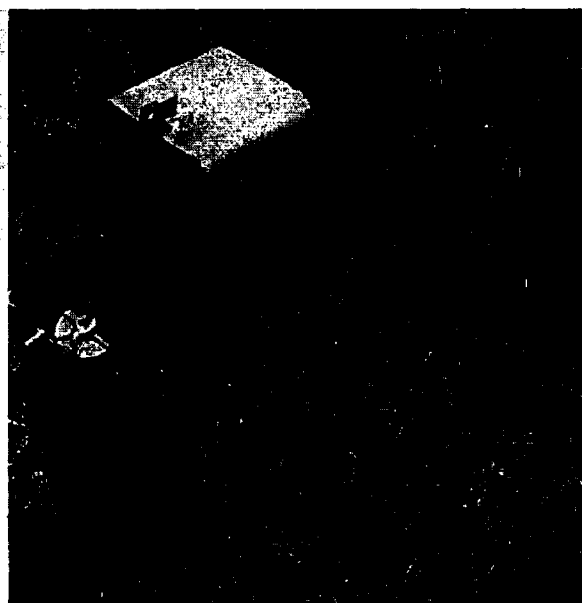
PHOTOGRAPH 12. GROUNDWATER MONITORING WELL MW4S



PHOTOGRAPH 13. GROUNDWATER MONITORING WELL MW7S



PHOTOGRAPH 14. GROUNDWATER MONITORING WELL MW15S



PHOTOGRAPH 15. GROUNDWATER MONITORING WELL MW16S



PHOTOGRAPH 16. UNKNOWN GROUNDWATER MONITORING WELL EAST OF
MW4S

ATTACHMENT 6

INTERVIEW RECORDS

INTERVIEW RECORD		
Site Name: Dubose Oil Products Company Site		USEPA ID No.: FLD000833368
Subject: Five-Year Review		Time: 1130 Date: 7/17/03
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit: Cantonment, Florida		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing
Contact Made By:		
Name: Sheri Zettle	Title: Geologist	Organization: USACE
Individual Contacted:		
Name: Mrs. Betty Dubose	Title: Site Resident	Organization: N/A
Telephone No: Fax No: E-Mail Address:	Street Address: City, State, Zip:	
Summary Of Conversation		
<p>When asked her overall impression of the project, Mrs. Dubose replied that she felt good about the project. She stated that there has been no community comment in the last five years. Mr. Whitehurst (neighbor to the north) was the only upset individual, and he had not voiced any concerns over the last five years.</p> <p>Mrs. Dubose has no knowledge of any incidents including vandalism, trespassing, or emergency responses at the site.</p> <p>When asked if she felt well informed about the site's activities and progress, Mrs. Dubose replied that she felt well informed. She was never advised of the situation with the generators [PRPs]. She has only been advised of the scheduling for the groundwater sampling events and when access to the site was required. She was never presented with the results of the analyses.</p> <p>Mrs. Dubose questioned the fate of the tanks and equipment from the water treatment system on site. She mentioned that her son may arrange to have the equipment removed from the site and used as scrap metal.</p> <p>Mrs. Dubose commented that throughout the entire process, everyone associated with the site has been very nice, polite and considerate of her feelings. She appreciated this consideration.</p>		

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Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing
Location of Visit:		
Contact Made By:		
Name: Sheri Zettle	Title: Geologist	Organization: USACE
Individual Contacted:		
Name: Leona Miles	Title: Project Manager	Organization: Florida Department of Environmental Protection
Telephone No: (850) 245-8927		Street Address: 2600 Blair Stone Rd., MS 4520 City, State, Zip: Tallahassee, FL 32399-2400
Fax No: (850) 245-8976		
E-Mail Address:		
Leona.miles@dep.state.fl.us		
Summary Of Conversation		
<p>When asked her overall impression of the project, Ms. Miles replied that everyone she has worked with has been very accommodating. She has no problems with the work that has been done at the site. She has a good working relationship with all of the parties.</p> <p>Ms. Miles stated that the only routine communications concerning the site in the last five years included a review of the reports.</p> <p>Ms. Miles commented that there have been no complaints, violations, or other incidents related to the site in the past five years. She feels well informed about the sites activities and progress.</p> <p>Ms. Miles did not have any comments, suggestions, or recommendations regarding the site's management or operation. She commented that the state was happy. She did note that the locations for the surface water samples from the June 2003 sampling event could have been marked. Although, it was not a real issue, since all results were below regulatory limits.</p>		

INTERVIEW RECORD		
Site Name: Dubose Oil Products Company Site		USEPA ID No.: FLD000833368
Subject: Five-Year Review		Time: 0830 Date: 8/12/03
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input checked="" type="checkbox"/> Incoming <input type="checkbox"/> Outgoing
Location of Visit:		
Contact Made By:		
Name: Sheri Zettle	Title: Geologist	Organization: USACE
Individual Contacted:		
Name: Robert J. Ariatti, Jr.	Title: Steering Committee Chairman	Organization: Ingalls Shipbuilding, Inc.
Telephone No: (228) 935-3912	Northrop Grumman Corp.	
Fax No: (228) 935-4864	Street Address: PO Box 149	
E-Mail Address: robert.ariatti@ngc.com	City, State, Zip: Pascagoula, MS 39568-0149	
Summary Of Conversation		
<p>When asked his overall impression of the project, Mr. Ariatti replied that nothing adverse occurred during the project; it was a successful project. He stated that there was great coordination between the agencies in getting the project resolved. All the individuals involved kept an open mind and tried to reach the best solution for the project. The economics were balanced with the results of what would work for the site.</p> <p>Mr. Ariatti stated that in his opinion, the remedy is working. It was necessary to re-sod the area a couple of times, due to Mr. Dubose moving things on the site. In the last four years, everything has been fine.</p> <p>When asked about the monitoring data, Mr. Ariatti replied that he understood that the contaminant levels were decreasing. Concentrations have consistently gone down.</p> <p>When asked about the frequency of site inspections and activities over the last five years, Mr. Ariatti stated that it averaged every 12 to 15 months that one of the PRPs had made a visit to the site.</p> <p>When questioned about changes to the O&M requirements, Mr. Ariatti stated that air monitoring had been required at one time. More excavation and groundwork had been necessary, since Mr. Dubose had used his own tractor to make adjustments to the site work. Due to erosion, it was necessary to re-sod.</p> <p>Mr. Ariatti stated that there had not been any unexpected O&M difficulties or costs in the last five years. When asked if there had been any opportunities to optimize O&M or sampling efforts, Mr. Ariatti noted the groundwater monitoring has been in line and seemed on track.</p> <p>Mr. Ariatti commented that this had been an enjoyable project. USEPA had been a pleasure to work with, and the state had also been good to work with. Overall, it was a great project.</p>		

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Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Sheri Zettle		Title: Geologist	
Organization: USACE			
Individual Contacted:			
Name: John Whitehurst		Title: North Property Neighbor	
Organization: N/A			
Telephone No:		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>When Mr. Whitehurst was asked his overall impression of the project, he replied that they did what they were suppose to do for clean up. He stated that his health was bad. He just had to have an iron metal test on his blood, and he may need to have a spinal tap. He became disabled in 1998. He stated that three to four people in the neighborhood have health problems. He has a strong belief that it has to do with the site. As a child, he played in the stream located between his property and the Dubose site.</p> <p>When asked about the effects of the site operations on the surrounding community, Mr. Whitehurst replied that the effect has been health issues. He has found dead animals around the property, mostly amphibians. He has seen some one-legged tadpoles. He believes pollution is still onsite. The overall appearance of the site is good, but turtles are dead and the stream will not ever look the same.</p> <p>Mr. Whitehurst was asked if he was aware of any community concerns regarding the site or its operation and administration. He replied that he wondered if the site was making people sick in the area. He started getting sick in the 1994/1995 timeframe. His brother-in-law is also sick, along with his sister, mother, and other community members.</p> <p>Mr. Whitehurst is not aware of any events, incidents, or activities occurring at the site such as vandalism, trespassing or emergency responses. He can still hear equipment running late at night on the site. It sounds like there is digging occurring.</p> <p>Mr. Whitehurst feels well informed about the site's activities and progress. He can see everything from his back door.</p> <p>Mr. Whitehurst would like to find out if the site is the cause of his sickness. He has been in and out of the hospital.</p>			